Clinicoetiological and Demographic Profile of Acute Pancreatitis in Kashmir Valley

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Citation

Abstract
Background and objectives: The study has been done with the aim to identify the clinicoetiological profile of acute pancreatitis in Kashmir valley in view of the fact of low alcoholism and high biliary tract worm infestation in the region.
Setting: Prospective, in patients admitted with acute pancreatitis.
Design and Patients and Methods: The study included 150 consecutive patients of acute pancreatitis who reported to surgical department of this hospital over a period of five years. All these patients were subjected to detailed history and clinical examination and investigations. Data collected was tabulated and subjected to appropriate statistical analysis.
Results: The majority of our patients were in the age range of 41-60 years. Females had a clear-cut predominance over males. A larger proportion of our patients was from rural areas of Kashmir. Biliary tract pathology was the predominant etiology in our study patients. Most patients presented with history of pain abdomen and nausea, vomiting. Tenderness and guarding of upper abdomen were the main clinical findings.
Conclusion: Acute pancreatitis is most commonly caused by biliary pathologies among which ascariasis is the second most common cause after the gallstones, which is preventable if transmission of ascariasis can be checked by sanitation barriers.

INTRODUCTION
Acute pancreatitis is an inflammatory process of the pancreas, with variable involvement of other regional tissues or remote organ systems. Worldwide, gallstones are the most common cause accounting for approximately 45% of cases, alcohol being the second most common, accounting for 35% of cases. Other rarer causes of include various drugs, trauma (accidental or iatrogenic), ERCP, metabolic abnormalities (hypertriglyceridemia, hypercalcemia), obstruction (tumors, pancreas divisum), infections (viral, parasitic, bacterial), and vascular abnormalities (emboli, ischemia, vasculitis). Recently, researchers have described hereditary forms caused by a mutation in the trypsinogen-1 gene allowing premature activation of trypsinogen to trypsin. Finally, about 10% of the cases are called idiopathic with no identifiable etiology. The premature activation of trypsinogen to trypsin in the acinar cell in the pancreas is considered a possible key event in the development of acinar cell injury, leading to auto-digestion. Usually, patients present with mild-to-severe epigastric pain, which in about 50% of cases radiates to the back and flanks, accompanied by nausea, vomiting, and fever.

MATERIAL AND METHODS
This prospective study was conducted in the Department of General Surgery, Government Medical College, Srinagar. The study included 150 consecutive patients of acute pancreatitis who were admitted over a period of five years from 1st June 2006 to 31st May 2011. A detailed history was taken and thorough clinical examination and investigations were performed on all patients to ascertain diagnosis with underlying etiology. Data collected was tabulated and subjected to appropriate statistical analysis. In each case of the study, history was taken and salient features were recorded especially with reference to pain, radiation and duration. Associated symptoms like nausea, vomiting, loss of appetite, jaundice, fever, abdominal distension were noted. Personal history with particular reference to alcohol intake, drug intake was taken into account. Relevant family history was also asked e.g. Dyslipidemia etc. Examination of each case was done with special reference to general condition. Vital signs, hemodynamic stability and abdominal status viz. tenderness, guarding, abdominal distension, epigastric fullness, presence of free fluid and bowel sounds were recorded. Cardiovascular system status, respiratory status and urine output of the patient were also observed. The clinical diagnosis of acute pancreatic and its etiology.
was ascertained by the findings on Ultrasonography findings, endoscopic retrograde cholangio-pancreatography (picture 1,2 and 3), magnetic resonance cholangio-pancreatography (image 4), and raised serum lipase/amylase levels. In our institution endoscopic Ultrasonography is not presently available, hence not done in any patient. The severity and morbidity/mortality was assessed by Computed tomography severity index (CTSI) as shown in picture 5 into group A of CTSI 0-3 (mild), group B of CTSI 4-6 (moderate) and group C of CTSI 7-10 (severe).

**Figure 1**
Picture 1 ERCP showing Ascarid (linear filling) defect in common bile duct

**Figure 2**
Picture 2 ERCP showing stone in common bile duct as filling defect

**Figure 3**
Picture 3 ERCP retrieval of ascarid through ampulla from pancreatic duct
RESULTS

The majority of our patients were in the age range of 41-60 years and the average age of male patients was 47.71 years and of female patients was 51.48 years. Females had a predominance over males with male: female ratio of 1:1.38. Larger proportion of our patients was from rural areas of Kashmir with rural:urban ratio of 1.38:1. Biliary tract pathology was the predominant etiology in our study patients (table 1,4,5 and figure A). Most patients presented with history of pain abdomen and nausea, vomiting (table2). Tenderness and guarding of upper abdomen were the main clinical findings (table 3). Serum lipase and/or amylase was raised in only 33(22%) of cases (table 6 and figure B). As shown in table 7 Maximum complications were noted in Group C patients (91.67%) and minimum complications were seen in Group A patients (6.25%). Mortality was found to be highest among Group C patients (16.67%) indicating the severe nature of disease in them and no mortality was noted in Group A patients(table 8).

TABLE: 1 ETIOLOGY

<table>
<thead>
<tr>
<th>Etiology</th>
<th>No. of Pa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallstones</td>
<td>75 (50%)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>6 (4%)</td>
</tr>
<tr>
<td>Biliary ascariid</td>
<td>36 (24%)</td>
</tr>
<tr>
<td>Traumatic</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Idiopathic</td>
<td>2 (1.3%)</td>
</tr>
<tr>
<td>Hyperparathyroid</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Drug induced</td>
<td>1 (0.7%)</td>
</tr>
</tbody>
</table>

The table shows that most common etiological factor was found to be gall stones.

TABLE: 2 SYMPTOMS OBSERVED AT PRESENTATION

<table>
<thead>
<tr>
<th>Symptom</th>
<th>No. of Pa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain abdomen</td>
<td>190 (68%)</td>
</tr>
<tr>
<td>Nausea</td>
<td>105 (30%)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>70 (14%)</td>
</tr>
<tr>
<td>Abdominal distension</td>
<td>30 (20%)</td>
</tr>
<tr>
<td>Fever</td>
<td>20 (10%)</td>
</tr>
<tr>
<td>Constipation</td>
<td>10 (5%)</td>
</tr>
<tr>
<td>Bruitness</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>Post obnema</td>
<td>3 (2%)</td>
</tr>
</tbody>
</table>

This table shows that pain abdomen was the most common symptom followed by nausea and vomiting.

TABLE: 3 ABDOMINAL FINDINGS

<table>
<thead>
<tr>
<th>Abdominal finding</th>
<th>No. of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epigastric tenderness</td>
<td>150 (63%)</td>
</tr>
<tr>
<td>Guarding</td>
<td>105 (40%)</td>
</tr>
<tr>
<td>Distension</td>
<td>215 (74%)</td>
</tr>
</tbody>
</table>

The table shows that all our patients had epigastric tenderness at presentation.
In our study, as far as the sex ratio is concerned, females outnumbered males and the male to female ratio was 1:1.38 which conflicts with most of the studies. Balthazaar EJ conducted a study in 1985 which had total of 83 patients with male : female ratio of 3.5:1, Balthazaar EJ had 53 men and 35 women in his 1990 series with male to female ratio of

DISCUSSION

In our study, as far as the sex ratio is concerned, females outnumbered males and the male to female ratio was 1:1.38 which conflicts with most of the studies. Balthazaar EJ conducted a study in 1985 which had total of 83 patients with male : female ratio of 3.5:1, Balthazaar EJ had 53 men and 35 women in his 1990 series with male to female ratio of
constipation (6%) and breathlessness (2%). Webster P in his study of 302 patients has a male female ratio of 1.85:1. Study of Miguez M had a male to female ratio of 1:1.4, K Choi reported a male to female ratio of 1:1.1 and A C de Beaux had a male to female ratio of 1.6:1 in his study. The possible explanation for this is the fact that alcoholism in males, which forms a major cause of pancreatitis in the western world, is found much less often as a cause of pancreatitis in this part of the world, because of a conservative society pattern and the female sex is at more risk of gallstone formation. Majority of patients in our study were in the age group of 41-60 yrs. The age range was 18-78yrs. Mean age for males was 47.714 years and for females was 51.483 years. Balthazaar EJ in his 1985 series had age range of 17-79 years with a mean age of 45 years, Balthazaar EJ had mean age of 52 years in his 1990 study and Antonio Carnovale in his study had an age range of 18-93yrs with a median age of 61.5 yrs. In the study by W Uhl the mean age was 50yrs. The age range in the study by A C de Beaux was 11-93yrs with a median age of 53yrs. The mean age was 42.9±15.9 years (range: 18-80 years) in the study by Raghu M Getal and A median age of 45 years (range, 20–94), was seen in study by Marko Lempinen et al. Our study is in concordance with most of the these studies. Majority of our patients were from rural areas, probably because of higher number of referrals from peripheral hospitals due to lack of intensive care facilities in those hospitals. The commonest etiological factor in our study was biliary tract pathology which included gallstones (50%) and biliary ascariasis (24%). W Uhl et al, in their study had biliary tract pathology in the range of 36-38%, Marshall JB found biliary pathology and alcoholic abuse as a cause of acute pancreatitis in 60-80% of patients, Miguez found biliary pathology causative in 52% of patients of acute pancreatitis and Steinberget al mentioned that biliary disease is the most common cause of AP in the United States, Asia and most of Western Europe (1994). A Biliary cause of pancreatitis was noted in a higher percentage of patients in our study, as parasitic infestation of the biliary tract in the form of biliary ascariasis is very much prevalent Kashmir valley. Moreover, alcoholism which forms a major etiology in the western world is not as prevalent in this part of the world. Presenting symptoms in our study were, abdominal pain (100%) followed by nausea and vomiting (76%), distension (20%), fever (12%), constipation (6%) and breathlessness (2%). Webster P D and Shah SSHA reported similar results in their studies. The abdominal findings on presentation in our patients was tender epigastrium in all the patients, guarding (70%), shifting dullness (24%). None of our patients had palpable mass or signs indicating bleeding into fascial planes on presentation. Webster P D reported abdominal pain and guarding in 50-90% of patients and Sheehy reported a similar incidence in his study which are similar as were found in our study. In 32% of our patients with acute pancreatitis, during sonographic assessment of the pancreas, it could not be visualized due to overlying bowel gas shadows at first instance. Silverstein et al noted that in the initial phase of the disease, a swollen pancreas may be detected, but due to overlying bowel gas, the gland cannot be visualized in 30% to 40% of patients. Gamaste observed that, in 35 percent of cases of acute pancreatitis, the pancreas is obscured secondary to bowel gas. In 22% of our patients who were diagnosed to have pancreatitis by Computed Tomography, had normal amylase on admission. In the rest, the levels were more than the maximum normal value (normal value taken as 60-180 IU/l). Clavien et al stated in their study that serum amylase alone cannot be used in the diagnosis of AP, because up to 19% of AP patients show normal amylase values on admission. In our study patients with CTSI OF 0-1 and 2-3 (MILD), had complications to the tune of 6.25% and mortality of 0%, whereas CTSI 4-6 (MODERATE) had complications in 36.37% and mortality of 4.5% and those with CTSI 7-10 (SEVERE) had complications in 91.67% and mortality of 16.67% which are consistent with results of the study done by Balthazaar EJ5.

CONCLUSION

Hence we concluded in our study that the biliary causes are most common of acute pancreatitis and among which ascariasis is the second most common cause after the gallstones, which is preventable if transmission of ascariasis can be checked by sanitation barrier.

References

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